

Reflections

Implantation Journey: The Original Human Myth (Part 2)

Karlton Terry

Abstract: The implantation journey of the blastocyst/embryo is traced throughout its many biologic/embryologic transitions and transmutations. Possible psychological impacts that may arise from early stresses, imprints, and other experiences are discussed. The journeying blastocyst/embryo is sometimes portrayed as a protagonist in the transcript of each human being's personal past. Events confronted and subsequent coping or survival styles during the journey are examined in reference to adult behavior patterns and belief systems. The relationship between Myths (as reflections of the human psyche) and the consequences of a human being's individual implantation journey (as the basis for templates of the human psyche) are explored.

Keywords: Blastocyst, Embryo, Implantation, Imprints, Myth, Behavior Patterns

Some researchers surmise that we are not truly "conscious" until we are three to five years old, when the myelination process is finally completed. Most people don't have "normal" recollectable memories of events preceding this age. But mentally retrieving stored images or events in the brain is only one kind of memory. The body has its own form of memory called "cellular memory" or "somatic memory." A limp, for example, can be the memory of a broken toe. A scar is the memory of a cut. An automatic and persistent avoidance of fire could be the behavior pattern resulting from the memory of a burn.

Karlton Terry is co-founder of the Institute for Pre- and Perinatal Education (IPPE) where he supervises IPPE teachers and teaches advanced pre- and perinatal courses. He was a member of the board for the International Society for Pre- and Perinatal Medicine (ISPPM). He has studied pre- and perinatal psychology with Margaret Grant, Graham Farrant, and William Emerson. As senior teacher for Emerson Training Seminars, Karlton co-taught with Emerson in Mexico and Switzerland. Karlton organized pre-and perinatal foundation courses and intermediate courses, teaching separately in Switzerland, Germany, Austria, England, Italy, Belgium, and Portugal. He has developed embodiment courses as well as IPPE baby therapy courses. He is a frequent speaker at international congresses and is author of "The V Stages of the Sperm Journey and V Stages of the Egg Journey."

Automatic responses or reactions are behavior patterns (not thought about or chosen in the moment) resulting from a kinesthetic memory. For example: Someone might recoil at the first moment they are physically touched, while someone else melts and relaxes at the moment they are touched. The recoil pattern is in place, probably not just in the brain. It has been somaticized. If such a behavior is always repeated by someone and can be recognized as more or less an unconscious response, it is memorized throughout the system. If we have recognizable but inexplicable patterns of behavior, surely the roots of such behavior grow deep into the past. Maybe the person who recoils upon contact had the experience as a blastocyst of nearly starving and needing to make uterine contact to receive food, but recoiled from first contact because of something lurking in the fluids besides good food (an acidic uterine wall, or nicotine for example). In this case contact, though necessary, is also experienced as harmful. If the blastocyst sustained its relationship and eventually received what it needed to live, then, by virtue of its patience or persistence a pattern based upon reward is established. It's a life or death issue, so the imprint will be potent. As a body memory, its efficacy can be profound, and set up a permanent pattern: the way to survive is to recoil first, sustain contact, then evaluate, digest and endure.

At some point our consciousness involves self-awareness: awareness of our body, awareness of our behavior, awareness of how our actions bring or don't bring us what we want and need. We develop awareness about the quality of our life, and we develop strategies to improve that quality: to get more attention, to earn more money, to eat better food, to receive more contact and love, to increase our happiness. When our consciousness develops, or arrives, it becomes aware of what has come before, what events and what lessons have accumulated along the path of our personal history. "Retroactive recognition" is the term I have coined to describe the gradual meditative, contemplative or sudden, epiphanic increase in expanded personal consciousness in connection with understanding how the details of the past have impacted the present.

One way to understand retroactive recognition is through the colorful analogy of the Mexican "vocho." A vocho is an old style Volkswagen Beetle, a "bug." In Mexico City they are painted green and white and are used as taxicabs. There are more VW taxis concentrated in Mexico City than anywhere else in the world, and

so the word vocho can refer to a bug or to the famous, pervasive taxi. Each one has a completely different personality. You can sit in a vocho and tell quite a bit about what it has been through in its lifetime. Some have had the front passenger seat removed. Many are missing a headlight or a radio. In one an image of the Virgin of Guadalupe hangs from the rearview mirror, while in another hangs a little plastic soccer ball. In some of them the windows function smoothly and others the window crank can jangle up through your elbow. Some of them pull to the left or the right, and some of them have brakes that seem like they will never really work despite having the ability to generate ear-piercing squeals. The seats, carpets, ceiling panels and all interior surfaces are variegated and unpredictable, and appear in various conditions of repair and cleanliness. Each vocho has its own distinct aroma—the molecular trace of its history, its passengers, and the many events that occurred and objects that passed through: food, petroleum products, perfume, cleaning agents, and so on. Becoming a conscious human being, whether it happens at age five or twenty-five, must be something like waking up in a vocho. You can look around and see, smell, feel, touch, and, in general, experience the vehicle, the essential history of the entity so to speak. And you really can tell what it has been through, how healthy, lazy, fastidious, creative, expressive or sloppy its owners have been.

Everyone knows that children are more vulnerable than adults. Babies are more vulnerable than children. Prenates are more vulnerable than babies. This is one reason there is so much prenatal mortality. The younger the prelate, the more vulnerable it is, the more at risk it is to mortality and mutability. Therefore one could imagine that the meandering blastocyst is probably more significantly shaped and formed than the human organism is at any later time in its life. If this assumption is correct, then it means the cells that become the brain and nervous system, and the cells that become the heart and other muscles are already oriented in some way, even before consciousness develops and resides in them. If there is no soul along the way, then eventually, as consciousness arrives, it must be a bit like waking up and finding yourself inside your own personal vocho.

Besides being shaped by biochemical, molecular, and peptide influences, the blastocyst is also subject to various mechanical influences as well. There are cilia inside the tube that sway and vacillate, facilitating the journey. The smooth muscle tissue, of

which the surface of the tube is comprised, contracts to create a peristaltic movement. Folds and flaps within the tube can look like a geologic landscape that has been eroded and washed by flash floods and flowing waters. Some blastocysts can get trapped in the folds, or hatch and implant in which case an ectopic pregnancy develops.

How does a blastocyst navigate the fallopian endometrium? Can it move, like a snail, sticking to the epithelial surface, until it finds its way down the tube toward the right location to settle down in the uterus? Apparently, blastocysts are not only transported by the cilia and the peristaltic contractions of the fallopian tube muscles, but they may be able to regulate their mobility as observed by Wiklund, et-al (1998):

...[P]rejunctional inhibitory A2 and postjunctional stimulatory A1 adenosine receptors on noradrenergic nerve terminals have been observed in the oviduct... suggesting that endogenous adenosine, acting differently via its receptors, may play a role in modulating adrenergic neurotransmission and consequently modifying tubal contractility..." (Sayegh & Mastroianni, 1991, pp. 266-275).

To translate, the blastocyst, as it comes into contact with the epithelial surface of the tube or endometrium, participates in an interaction that creates something like a wave, contracting the tubal muscles behind it and relaxing the ones in front to push or steer itself along the surface of the tube and the uterus.

Besides possibly having the ability to steer itself, it is widely postulated by researchers that the blastocyst has the ability to communicate and initiate complex interactions with its environment. Researchers are still not clear on how the embryonic-maternal cross-talk functions at a molecular level in the tube and in the uterus. "Communication between [the human embryo and the maternal endometrium] and their reciprocal effects on each other is new territory. Increasing evidence indicates that embryonic regulation induces reciprocal interactions that change throughout the implantation process" (Simon et-al, 2001, p. 1)

If the embryo (blastocyst) is indeed regulating aspects of its journey, then is such regulation arising out of complex biologic and molecular interactions driven by the machine of nature, or is there already some form of consciousness within the organism?

The process is one we have all traversed. Either because it is experienced by a soul while it is happening, or because retroactive recognition conveys its long lasting impacts, the consequences of the journey are embedded in the human body and psyche.

Whether or not our journey down the tube is part of the soul's "Fall" the imagery and descriptions of the tubes and the "Fall" are abundantly portrayed and symbolized in art, literature, architecture, and everyday life and language: the rabbit hole in Alice in Wonderland; the trap door that leads to the dungeon; the Phantom of the Opera's watery catacombs; the tunnels and mazes (many with booby traps) in pyramids, and castles; the tubes and chutes in movies and TV (James Bond, Finding Nemo, The Matrix, Get Smart); the old style water well in William Blake's paintings; the wishing well in Disney's Snow White. Indiana Jones and other archeologists and adventurers have been through numerous "fallopian tubes." Fallopian tubes are everywhere in our culture in the form of tunnels, elevators, carwashes, amusement park rides (the tunnel of love for example), water park rides and slides, luge runs. Downhill skiers (especially on narrow runs), tobogganers, and spelunkers across the world are recapitulating the fallopian tube journey, and so are we if we feel something special when we enter a tunnel or see a tube symbolized in the arts. Finally, when everything falls apart (and the soul has to leave heaven) it goes "down the tube" or "everything just goes down the drain."

As the blastocyst descends, it continues to grow as the tube narrows. From within there is pressure against the zona pellucida, which is stretched thinner and thinner as more cells grow and as more uterine milk is absorbed. The portal to the uterus is no larger than a few strands of human hair, and it leads to the landscape of the endometrial surface of the uterus itself, the womb. The uterus is approximately the size and shape of an upside down pear.

The Fall

*Humpty Dumpty sat on a wall,
Humpty Dumpty had a great fall,
All the King's horses,
And all the King's men,
Couldn't put Humpty together again.*

Some of the most famous lines in English salute an archetypal character that undergoes a simple but dramatic experience. One reason the event is unforgettable is because it describes, in quite a precise portrayal, the next stage of the fallopian tube journey. Humpty, the egg—or the blastocyst, is sitting on the wall between the fallopian tube and the uterus. One could also accept, as Thompson points out, that "Humpty Dumpty is the cosmic egg, the wall, the edge between transcendence and existence.... Humpty Dumpty is the immortal soul before its fall into time and neither God nor his angels can put him back into the world beyond time" (Thompson, 1981, p. 9) Probably Thompson's and my interpretation of the poem are virtually the same, and the blastocyst and the soul are falling together at the same time. In the prenatal version, the transition is also between realms marking a shift in scale from the narrow, nurturing tube with its uterine milk, cilia, and peristaltic waves to a vaster landscape. In the uterus the blastocyst must hunt for and discover an appropriate site to call home: primal homesteading. Humpty's fall is "great" because, as Thompson points out, there is no going back. In the prenatal interpretation, Humpty literally falls apart (see Hatching, below) and nothing is ever the same again. The blastocyst loses its protective skin (shell). An exposed jellylike clump of vulnerable cells, like the innards of an egg, constitutes a vulnerable stranger in a strange land. This primal creature, also an archetype—the unformed, potential human—must fend for itself against the possibly hostile wilderness of the uterus and find a way to feed itself.

We can all relate to the image and the pithy ramifications of the existential "fall" and maybe it is one of our more visceral relationships to myth, owing to our direct personal participation in it. If we consider mythic and poetic depictions of the "fall" there are many parallels to the prenatal fall. The soul presumably falls from the world beyond time, more proximal to the creator, just as the blastocyst, materializing from the miraculous event we call conception (the biologic "creator"), rolls down and falls into the uterus. The fall in all cases is a one-way trip, and the consequences have no less than profound existential implications. Residing in the heart of this myth is the painful theme of separation, for when we fall, we fall alone. The soul distills out of the unmanifest, or heaven, to become an individual and the blastocyst distills out of the egg and sperm union advancing not as a paternal cell or a maternal cell, but a separate individual, a

single celled organism. Another prenatal theme parallel to the poetic and mythic fall, and this is common throughout the prenatal and preconception stages, is the theme of journeying.

So what is it like for each developing consciousness or embodying soul to feel the fall? How do the ramifications of the fall develop in the human psyche? How do we humans, upon the face of the earth in our daily life, re-enact this phase of our early life? The most common recapitulation of the fallopian tube fall is the dream: who has not had, or heard of, the famous falling dream, where the dreamer always wakes up before landing? It is possible that sometimes the blastocyst literally falls through the cavity of the uterus and lands to implant somewhere near the cervix, but in most cases the blastocyst implants in the fundus (the uppermost part of the uterus, between the fallopian tubes), and in most cases the implantation site is closest to the fallopian tube in which conception occurred. Still, all the while, potential for literal falling is there. Gravity is an inescapable force, presumably irrelevant in the world beyond time. Clinging to and exploring the uterus is an exercise literally recapitulated by mountain climbers. And the fall is like descending or rappelling, only without the rope.

Ecstasy and surrender are states of being that can be affiliated with the "fall," and surely these are acted out in many ways. My own son devised endless situations where he would shout, "Catch me Daddy," and before I knew it he was landing in my arms. Adults jump out of airplanes and run off cliffs (with parachutes attached to their backs). And bungee jumpers are able to take the fall without having to land. Especially if a lush uterine environment is waiting, the "fall" can manifest as something like an ecstatic flight as enacted by the famous Mexican cliff divers of Acapulco. Specially prepared Mayan virgins were ceremonially brought to the edge of cenotes (portals in the earth leading to underground water systems) and then tossed in, a ritual performed to propagate life and abundance.

When we "fall into money" we fall, like the blastocyst, into something that can sustain us. When we "fall in love" we fall, like the blastocyst, into intimate contact. When we "fall into our soup" we fall, like the blastocyst, into a food source.

There are many "falls" in the myth of the human being: the soul falls from heaven, Adam and Eve fell from grace and were expelled from the Garden of Eden, the ovulating egg falls from the ovary, the blastocyst falls down the fallopian tube then falls from

the fallopian tube into the uterus and then falls into the uterine wall, and finally, the newborn falls from the birth canal into an alien external world.

The entire implantation journey takes about seven days, and if it is not successfully completed the blastocyst dies. The "fall" marks, approximately, the halfway point. Temporal symmetry here invokes the image of a grain of sand, falling from one cone of the hourglass into its symmetric opposite. In all of the examples cited above the salient meaning of the fall is that a transition point has been passed, a threshold has been crossed, and a metamorphosis is occurring.

Once the threshold has been passed, in the case of the fall from the fallopian tube, a metamorphosis is in fact necessary. For by now the blastocyst has out-grown its own skin, and in order to survive, it must shed that skin. If it doesn't it will starve and die.

Hatching

As we know, the growing blastocyst's cells are increasing at a "doubling" rate with two becoming four, sixteen becoming 32, and a bit later 128 becoming 256. Eventually, sometimes while still in the tube, cells can begin to differentiate, with the greatest number of cells beginning to form what will become the placenta. Opposite these are the ones that will become the fetus. Cell density within the zona pellucida increases, and with that increase, permeability within the zona decreases. As Peter T. Ellis suggests, eventually the cells at the center are unable to access nutrients of the uterine milk (Ellis, 2001, pp. 29-30). There are too many other cells proximal to the wall of the zona through which the milk arrives. The core cells begin to starve. There is no blood or respiration system, and the cellular colony cannot feed its inner core. "... when cells band together in creating multi-cellular communities, they follow the collective voice of the organism, even if that voice dictates self-destructive behavior" (Lipton, 2005, p. 165).

With a starving core, and more and more hungry cells dividing, it becomes necessary for the early human organism to evolve. Without a radical change in the feeding arrangements, it will die.

I believe that "core starvation" in the blastocyst prior to hatching is a universal phenomenon, a "template-generating event horizon," resulting in an important "somatic memory." One

of the ways in which a somatic memory can be observed or experienced is through behavioral patterns arising out of it. The root cause of addictive behavior, for example, may be rationally explained in relation to "core starvation." No matter how much uterine milk the blastocyst absorbs prior to hatching, the core is not fed, remaining instead hungry, unsatisfied—potentially starving. Individuals with over-eating disorders usually describe their situation with hopelessness, "No matter how much I eat, I can never get enough." Core starvation theory is relevant to sex addiction, alcohol addiction, drug addiction, religious fanaticism, gambling and any other addiction in which satisfaction is never adequately sustained. Addicts, like the starved core cells of an old blastocyst (four to six days of age) never reach a sustained point of satiation, and are compelled to indulge themselves more and more in an attempt to feel "full." Such indulgences can lead to unsavory endings.

Lucky addicts though are the ones who recognize the impending self-destruction in their behavior, often only at the last moment when it is nearly "too late." These are the addicts who are eventually compelled to seek help, and transform their lives. Somehow the destructive pattern serves the purpose of compelling the organism to transform. Persistent pain whether it is physical or emotional can be a gift if we are able to "listen" to it, and understand how the pain is asking us to change, to seek genuine transformation. We can transform our patterns, our habits, even our physical shape. All blastocysts must transform their physical shape, and their way of eating in order to live. The early human undergoes a morphogenesis from a nomadic "milk" drinker to a stationary blood drinker. But the transformation is not an easy one. Because of genetic disorders, uterine inadequacies, or other weaknesses in the biologic systems, it fails nearly 45% of the time.

Some somatic memories result in deep impulses and compulsions because they were crafted at a time in personal history when urgency forced them into mythic proportion. Like the Greek Odysseus and in Roman mythology Ulysses, blastocysts can encounter many "life or death" situations. How blastocysts survive such challenges probably generates behavior templates at cellular levels; remember, "... cells are capable of learning through environmental experiences and are able to create cellular memories, which they pass on to their offspring" (Lipton, 2005, 165). The behavioral templates are stored in the cellular system and passed on to the descendants of each cell.

A "template-generating event horizon" is a challenge (or ongoing situation) that is serious enough to the well-being of an organism that, if the organism survives, its behavior will be modified. Descendant cells arriving after a template-generating event horizon somehow recognize certain challenges in life (external triggers) and respond automatically based upon the programmed template. As the prenatal organism develops, persistent cellular programs end up defining themselves in neurological patterns in the brain, thus, some babies are born with predispositions toward eating, affection, sleeping and so on. But these behavioral predispositions can lead to unconscious behavior patterns that might not serve the highest good of an adult person.

For example, conditions such as anorexia and bulimia may derive from early starvation experiences (template-generating event horizons) in which the blastocyst first nearly starved to death, or took in mother's blood at a time when the blood needed to be avoided or expelled because it was full of toxins. If the metabolic continuity of a cell is shocked during such a crisis the distorted template could read: "Starvation leads to acceptance and life," or "Anything that comes in must be expelled for me to survive." When the blastocyst survives, learned behavioral reactions transfer to its ultimate descendant, the adult. Exogenous triggers activate old survival patterns.

The adolescent or adult who feels unacceptable (as probably most blastocysts do) enacts a now irrational pattern that is compelled into repetition even though it makes no sense at all to outside observers. In less anxious forms a pattern arising from the pre-hatching starvation phase of the blastocyst could be as simple as saying "I'm starving to death" when I've become aware that I've waited too long to eat.

Before implantation can be attempted the blastocyst must hatch and it is likely that hatching itself, like core starvation, is a template-generating event horizon and carries with it the possibility for somatic memories. We all know how vulnerable a chick is when it pecks its way out of its shell. The chick though is quite well formed. It can wobble around and it has a beak, an esophagus, a stomach, and intestines with which to begin eating and digesting. The blastocyst is a much more vulnerable creature. It has no feathers to protect it from its environment; it has no eyes with which to look for food. Blastocyst cells in the ejected cluster, through their own thin membranes, will have direct contact for

the first time with the multiversity of the uterine environment. We know that the environment can be toxic or lush, barren or frigid, sometimes even deadly, and we know that each cell analyzes thousands of stimuli from the micro-environment it inhabits. Pre-hatched blastocyst cells have had, as their environment, only each other and "filtered" uterine milk within the protective encasement of the zona pellucida. Without the zona pellucida there is no outer skin to modify the sensations of uterine contact. Imagine also how the skin of a newborn baby feels when it has left the amniotic waters to emerge into the much colder air. The process of hatching is a precursor to birth, a precursor, even, to any sense of deep vulnerability experienced while emerging into a new situation. Exposure, over-exposure, vulnerability, hunger and nakedness are the themes.

If we follow the theory of template formation as the precursor of behavior patterns, emotional responses, and psychological tendencies, the list of likely results from the hatching experience is impressive. Hatching and how we hatch could impact: how we reveal ourselves, how we come out into the world, how we enter a room, how our skin feels when we come into contact with something surprising, how we escape old patterns, how we feel when we are expanding or stretching ourselves in new ways, how we feel when we are naked, how we feel when we can no longer hold it together, how we feel when we are lost or when we run out of money, and how we feel when we have to surrender and let ourselves become vulnerable. Idioms and sayings relevant to the hatching phase can easily be understood by all of us because we have all passed through the same experience. Hatching experiences by which we were wounded can be described with day-to-day language. Stimulating present moment conditions similar to the hatching experience can be described by the language of hatching as it has organized itself in idioms: "She is thin-skinned." "He is spilling his guts." "I feel turned inside out." "You wear your heart on your sleeve." "One more word and I'm just going to explode." "I can't hold it together anymore." "I feel like he can see right through me."

The blastocyst cannot force its trophoblast (the leading, implanting part) to protrude through the zona pellucida to make direct contact with the endometrium. In order for its hungry inner cells to venture forth and seek the nutritious maternal blood, it must shed the skin that has kept the blob of cells together. The cells are hungry (those that have been on the inside

especially) and as a colony they have common goals. The following excerpt from Bruce Lipton's book, *The Biology of Belief* helps us understand what might be going on for the newly hatched blastocyst cells:

I also made it clear to my students that each cell is an intelligent being that can survive on its own, as scientists demonstrate when they remove cells from the body and grow them in a culture...these smart cells are imbued with intent and purpose; they actively seek environments that support their survival while simultaneously avoiding toxic or hostile ones. Like humans, single cells analyze thousands of stimuli from the microenvironment they inhabit. Through analysis of this data, cells select appropriate behavioral responses to ensure their survival" (Lipton, 2005, pp. 37-38).

Before the blastocyst can implant, before the inner cells can contact and experience the epithelial surface of the endometrium, hatching must occur. From the perspective of organism function and process, hatching is about letting go and about coming out, about release and transformation, about arriving, eating, and growth, and, hatching is driven by hunger. Some implantation researchers describe the hatched blastocyst not as vulnerable, but as aggressive and hungry, on the prowl for food. Seen from this perspective, the blastocyst eats, or "digests" its way into the endometrium. Maybe vulnerable blastocysts also have an aggressive aspect as well, driven by hunger to take what is needed to live.

Editor's Note: Part III will be in the next issue.

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